

WHAT IS CLAIMED IS:

1. A single or multilayer sheet comprising a microvoided layer permeable to low surface tension liquids, which microvoided layer comprises a continuous phase comprising a polylactic-acid-based material and interconnecting microvoids, the microvoided layer having a total absorbent capacity of at least about 14 cc/m².
2. The sheet of claim 1 further comprising void initiating particles.
3. The sheet of claim 2 wherein the particles are in the range of 0.1 to 1.0 micrometers in average diameter.
4. The sheet of claim 3 wherein the particles are in the range of 0.1 to 0.6 micrometers in average diameter.
5. The sheet of claim 1 wherein the sheet is extruded as a single layer.
6. The sheet of claim 2 wherein the particles having a particle size of from about 5 nm to about 15 μ m.
7. The sheet of claim 1 wherein said microvoided layer is biaxially oriented.
8. The sheet of claim 1 wherein said microvoided layer has a dry thickness of from about 25 to about 400 μ m.
9. The sheet of claim 1 wherein said polylactic-acid-based material is composed of at least 75% by weight of poly(L-lactic acid).

10. The sheet of claim 2 wherein the particles are inorganic and have an average particle size of from about 0.1 to about 10 μm and make up from about 45 to about 75 weight % of the total weight of the microvoided layer.

11. The sheet of claim 2 wherein the particles are organic and have an average particle size of from about 0.3 to about 2 μm and comprise from about 45 to about 75 weight % of the total weight of the microvoided layer.

12. The sheet of claim 1 wherein said polylactic-acid-based material is a mixture of at least 90% poly(L-lactic acid) and at least 1% poly(D-lactic acid).

13. The sheet of claim 10 wherein the inorganic particles are present in an amount between 50 to 65 weight %.

14. The sheet of claim 10 wherein the inorganic particles are selected from the group consisting of barium sulfate, calcium carbonate, zinc sulfide, zinc oxide, titanium dioxide, silica, alumina, and combinations thereof.

15. The sheet of claim 10 wherein the inorganic particles have an average size from 0.3 to 2.0 μm .

16. The sheet of claim 1 wherein the microvoided layer is in a multilayer film and is adjacent to a second layer.

17. The sheet of claim 16 wherein the second layer comprises a voided or non-voided polylactic-acid-based material and is adjacent to and integral with said microvoided layer.

18. The sheet of claim 1 wherein the continuous phase comprises additional polymers or blends of other polyesters.

19. A method of making a sheet material comprising a permeable microvoided layer, which method comprises:

- (a) blending inorganic particles into a melt comprising a polylactic-acid-based material,
- (b) forming a sheet comprising a layer of a polylactic-acid-based material containing inorganic particles by extrusion, and
- (c) stretching the sheet biaxially to form interconnected microvoids around the inorganic particles.

20. The method of claim 19 wherein the permeable microvoided layer is extruded as a monolayer film.

21. The method of claim 19 wherein the permeable microvoided layer is stretched at a temperature of under 75°C.

22. The method of claim 19 wherein the particles are in the range of 0.1 to 1.0 micrometers in average diameter.

23. The method of claim 22 wherein the particles are in the range of 0.1 to 0.6 micrometers in average diameter.

24. The method of claim 19 wherein the permeable microvoided layer has a dry thickness of from about 25 to about 400 μm .

25. The method of claim 19 wherein the particles make up from about 45 to about 75 weight % of the total weight of the permeable microvoided layer.

26. The method of claim 19 wherein the inorganic particles are selected from the group consisting of barium sulfate, calcium carbonate, zinc sulfide, zinc oxide, titanium dioxide, silica, alumina, and combinations thereof.

27. The method of claim 19 wherein the layer of polylactic-acid-based material containing inorganic particles is coextruded with at least one other layer to form a multilayer film.

28. The method of claim 27 wherein the at least one other layer comprises a voided or non-voided polylactic-acid-based material adjacent to and integral with the permeable microvoided layer.

29. The method of claim 19 wherein the sheet is stretched in both directions simultaneously.

30. The method of claim 19 wherein the sheet is sequentially stretched in a machine direction first followed by a transverse direction.